REMARKS

Claims 10-29 are presently in the application. The above amendments are being made to place the application in better condition for examination.

Reconsideration of the rejection of claims 10-29 under 35 U.S.C. 103(a) as being unpatentable over applicant admitted prior art (AAPA) in view of Zenith (GB 750,673), is respectfully requested.

Claim 10 is directed to a fluid pump for use in a fuel injection apparatus of an internal combustion engine and having a housing that contains a pump chamber in which at least one rotary driven delivery element is contained, which delivery element delivers fluid to a delivery chamber from an intake chamber connected to a reservoir, and having a pressure limiting valve for limiting the pressure prevailing in the pressure chamber, which valve has a valve piston inside the housing, the valve piston being acted on in the closing direction by a prestressed closing spring and being acted on in the opening direction by the pressure prevailing in the pressure chamber and, when a predetermined pressure in the delivery chamber is exceeded, opens a connecting conduit from the delivery chamber to the intake chamber, and a filter preceding the fluid pump and/or a filter, following the fuel pump, the improvement wherein the fluid pump comprises *a pressure chamber having a connection to a region downstream of the preceding filter or a connection to a region downstream of the following filter*, wherein *the pressure prevailing in the pressure chamber influences the force on the valve piston in the closing direction in such a way that as the pressure in the pressure chamber decreases, the force*

on the valve piston in the closing direction increases, ***and wherein the valve piston is offset from a symmetrical center of the pump chamber.***

AAPA describes the fundamental prior art.

Zenith is relied upon by the examiner for disclosing a fluid pump having intake chamber (14), pressure chamber (25), valve piston (23), moving wall (24), closing spring (26), rod (R), pump chamber (13), delivery element (5, 6), and a connecting conduit (21) between the pressure chamber (25) and the intake chamber (14).

Zenith does not disclose the pressure chamber (25) having a connection to a region downstream of a preceding filter or a connection to a region downstream of a following filter. The examiner asserts that if combined with AAPA described above, Zenith's pressure chamber would inherently have a connection to a region downstream of the preceding filter or a connection to a region downstream of the following filter. Applicant disagrees because of the following.

The Examiner's argument in combining the fundamental prior art in the application with the Zenith reference, G8 750,673, is incorrect, as stated in the response to the prior Office action. In the prior art applied in the present application, there is no filter, and this characteristic is integral to the definitive body portion of claim 10, as emphasized above. Comparing the Zenith reference with the pump according to present claim 10 clearly shows that a chamber, corresponding to the pressure chamber 85 of the pump of the invention, is not present in the Zenith reference. The chamber 25 in Zenith communicates with the pressure chamber 15 of the pump via a throttle restriction 29, so that with increasing pressure in the pressure chamber 15,

the pressure in the chamber 25 rises and well, as thus, the closing force on the valve piston 23 is reduced. In the Zenith reference, the chamber 34 communicates with the atmosphere via bores 35. Thus, in the Zenith reference, a simple pressure limiting valve is realized, in which only as a function of the pressure in the pressure chamber 15 is the valve piston 29 pressed more or less strongly in the closing direction.

Deviating from this, in the present invention the pressure chamber 85 is additionally provided, which communicates with a region downstream of the filter. Thus, in the pump of the present invention, a control of the valve piston that is dependent on the pressure drop through the filter is additionally achieved, which is not provided in Zenith. Even if Zenith is combined with the fundamental prior art cited in the application, this kind of function is not arrived at, nor is the recited structural arrangement. In the pump according to claim 10 of the present application, at a high pressure drop through the filter the pressure downstream of the filter is low, and thus according to claim 10 of the present application, the force acting on the valve piston in the closing direction is increased, so that more fluid is pumped by the pump, and as a result the increased pressure drop through the filter is compensated for. When the pressure drop through the filter is slight, the closing force acting on the valve piston is less, and thus correspondingly less fluid is pumped by the pump, since there is no need to compensate for a great pressure drop through the filter. In Zenith, the valve piston 23 of the pressure limiting valve is actuated only as a function of the pressure in the pressure chamber 15, so that no compensation for the different pressure drops through a filter is possible.

Furthermore, none of the prior art show or suggest the feature of amended claim 10 of the valve piston being offset from a symmetrical center of the pump chamber.

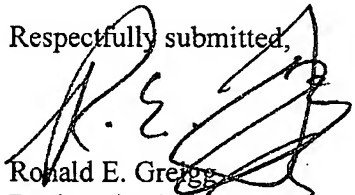
This feature is described in paragraph [0016] of the specification and is integral to the performance of the pump, as the valve piston being offset from the center optimizes the positioning of the valve piston against the end surfaces of the gears. The pump is designed with a bore 56 let into the bottom of the groove 52. The bore 56 extends at least approximately parallel to the rotation axes 25, 27 of the gears 16, 18 and is preferably situated offset from a connecting line 58 between the rotation axes 25, 27 of the gears 16, 18 by a measurement H in the direction of the pressure chamber 42. The valve piston 60 that functions as the valve member of the pressure limiting valve 50 is guided so that it can slide in the bore 56. The end surfaces of the gears 16, 18 are embodied as at least approximately flat and are positioned at least approximately perpendicular to their rotation axes 25, 27. The valve piston 60 rests against the end surfaces of the gears 16, 18 in the region in which their teeth engage with one another. The chamber 64 delimited in the bore 56 by the valve piston 60 at its rear end oriented away from the gears 16, 18 communicates with the intake chamber 40 via a bore 66 in the housing part 10.

The fundamental prior art (AAPA) and Zenith fails to show when taken alone or combined the combination of the elements according to claim 10 including the arrangement of the filter with the fluid pump having a pressure chamber connected to a region downstream of the preceding filter, or connected to a region downstream of the following filter, where the pressure prevailing in the pressure chamber influences the force on the valve piston in the closing direction in such a way that as the pressure in the pressure chamber decreases, the force

on the valve piston in the closing direction increases, and where the valve piston is offset from the symmetrical center of the pump chamber. Therefore, it is respectfully requested that the rejection of the claims be withdrawn.

Entry of the amendment is respectfully solicited.

Respectfully submitted,



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